REMARKS

Amendments

The specification is amended at page 16 to inset a brief description of the drawings.

Claim 1 is amended to delete the "and/or" language. Claim 13 is amended to delete "or an apparatus." Use claim 14 is cancelled. Claim 16 is amended to correct an obvious grammatical error. New claims 18-27 are directed to further aspects of applicants' invention and are supported throughout the disclosure. See, e.g., page 10, line 15 - page 14, line 32.

Objection to the Abstract

On page 2 of the Office Action, it is asserted that the "abstract" is objected to for failure to contain a brief disclosure of the figures, citing MPEP §608.01(b). However, applicants assume that this was an error and that the objection was intended to be directed to the specification, not the abstract. MPEP §608.01(b) does not require that the abstract contain a brief disclosure of the figures. The specification is amended above to include a brief description of the drawings. Withdrawal of the objection is respectfully requested.

Objection to the Claims

Apparatus claims 11-17 are objected as being dependent on method claims. By the above amendments, claim 11 is amended to be in independent form and also amended to correct typographical errors. Claim 13 is a product-by-process claim reciting the product produced by the method of claim 1. Claim 14 is cancelled. Claim 16 is already an independent claim and thus is not dependent on a method claim. Withdrawal of the objection is respectfully requested.

Rejection under 35 USC §102(e) in view of Faris et al. (US '044)

Claims 1-17 are rejected as allegedly being anticipated in view of the disclosure of Faris et al. (US 6,753,044). This rejection is respectfully traversed.

In this and all the anticipation rejection, the Examiner interpreted applicants' and/or clauses of claim 1 to be "preferences" and thus apparently did not consider these features in

presenting the anticipation rejection. However, this interpretation of the "and/or" language is incorrect.

A phrase such as "X contains A, B, C and/or D" is properly construed as containing at least one of A, B, C and D, or combinations thereof. The rejection presents no rationale as to why such a phrase would be construed as only reciting preferences. Thus, the "and/or" language of applicants' claims can not be dismissed as defining a preference rather than a feature of the claimed invention.

To establish anticipation, the prior art reference must teach explicitly or inherently every feature of the claimed invention. Moreover, in making an anticipation rejection, an examiner must show **where each and every feature of the claimed invention is described** in the allegedly anticipatory reference. See, e.g., *Ex parte Levy*, 17 USPQ2d 1461, 1462 (BOPA 1990) ["Moreover, it is incumbent upon the Examiner to identify wherein each and every facet of the claimed invention is disclosed in the applied reference. "].

All of the anticipation rejections fail to satisfy this requirement because they do not show how the prior art discloses one or more of the features recited in the claims using and/or language. Thus, all of the anticipation rejections should be withdrawn. In any event, to further prosecution, claim 1 is amended above to eliminate the "and/or" language.

Turning to the specific disclosure of US '044, this document describes broadband and spectrally-tuned circularly-polarizing reflective microflakes made from cholesteric liquid crystal film materials. These flakes can be used in the production of super-white, mirror-like and additive-primary colored inks, paints and crayons.

Figure 2C schematically represents a spectrally-tuned CLC microflake having a double-layer laminated construction. The CLC layer is made from a layer of right-handed circularly polarizing material (RHCP) film material, and the second CLC layer is made from a layer of left-handed circularly polarizing material (LHCP) film material. See also Figure 3C, column 6, lines 26-37, and column 7, line 65-column 8, line 8.

Beginning at column 11, line 19, US '044 describes a method of manufacturing color media. Step A of this method is the production of a CLC laminated film. Substep A5 involves curing a deposited layer of liquid crystal film material. See column 12, lines 9-10. At column 12,

lines 42-65, US '044 refers to materials which are said to be used in Examples 1-10. At column 12, lines 60-65, US '044 describes a blue compounds (CC4039L) and (CC4039R) having a left-handed (LH) spiral structure and right-handed (RH) spiral structure, respectively, and a red compound (CC4070L) having a left-handed (LH) spiral structure. US '044 describes curing the blue compound and the red compound by UV curing at 70 °C and curing a mixture of CC4039R and CC4039L at 70 °C.

In the Examples 1-9, curing is performed at temperatures of at 70 °C, 80 °C, 82 °C and 92 °C. See columns 20-24.

In Example 10, two polymerizable acrylate cholesteric liquid crystal compounds, CM 95 and CM 94, which reflect right-handed circular polarization at blue and red wavelength, respectively, are used. Blue compound, CM95, is mixed with a non-cross-linkable nematic M15 and a photo initiator and is then said to be cured at 35 °C to produce a broadband polarizing film which reflects right-handed light. The weight ratio of the compounds in this mixture, i.e., CM95 to M15 to photo initiator is 2:1:0.06.

Example 10 does not describe an image layer which reflects left-handed circularly polarized light, let alone such a layer which is polymerized at a temperature below 60°C. Also, in the mixture of Example 10, the weight percentage of non-cross-linkable nematic in the mixture of polymerizable acrylate cholesteric liquid crystal compound and non-cross-linkable nematic is 33%. Compare, e.g., Applicants' claim 27.

US '044 does not disclose or suggest first and second image layers, wherein one image layer reflects right-handed circularly polarized light and the other reflects left-handed circularly polarized light, and which each comprise polymerized or crosslinked cholesteric liquid crystal material obtained by polymerizing the material in its liquid crystal state at a temperature below 60°C. Thus, US '044 fails to anticipate applicants' claimed invention. Withdrawal of the rejection under 35 USC §102(b) is respectfully requested.

Rejection under 35 USC §102(b) in view of Faris (US '964)

Claims 1-17 are rejected as allegedly being anticipated in view of the disclosure of Faris (US 5,264,964). This rejection is respectfully traversed.

US '964 discloses a so-called multi-mode stereoscopic imaging system wherein a first stereo system is convertible back and forth from an auto stereo viewing mode (without glasses) to a binocular stereo viewing mode (with glasses). See the abstract.

As can be seen from figures 1-10 of US '964, the right-handed and left-handed images are side-by-side (spatially multiplexed), rather than superimposed. Moreover, these images form a stereo pair. See column 6, lines 14-17. Figure 11 also uses side-by-side right-handed and left-handed images, but the two images are different. However, in the embodiment of Figure 11, US '964 does not mention the use of at least one first image layer of a chiral liquid crystal material, and at least one second image layer of a chiral liquid crystal material, wherein one of the image layers reflects right-handed circularly polarised light and the other reflects left-handed circularly polarised light.

US '964 does refer to cholesteric liquid crystal silicones. Specifically, US '964 discloses that there are two classes of polarizer polymers, i.e., an absorptive class and a reflective class. Cholesteric liquid crystal silicones are said to be members of the reflective class. The reflective class "separates incident unpolarized light into two circularly polarized states P1 and P2, one state P1 is transmitted and the other state P2 is reflected." US '964 describes how by coating a sheet of CLCS with a reflective metallic film on one side one can convert all incident light is to polarized light of state P1. See column 3, line 43 - column 4, line 7.

However, as can be seen from the above, discussion, the disclosure of US '964 regarding cholesteric liquid crystal silicones relates to polarizers, not image layers. Compare Applicants' claim 1. US '964 does not disclose or suggest first and second image layers which each comprise polymerized or crosslinked cholesteric liquid crystal material; nor does US '964 disclose such layers that are obtained by polymerizing the material in its liquid crystal state at a temperature below 60°C.

Thus, US '964 fails to anticipate applicants' claimed invention. Withdrawal of the rejection under 35 USC §102(b) is respectfully requested.

Rejection under 35 USC §102(b) in view of Faris (US '554)

Claims 1-17 are rejected as allegedly being anticipated in view of the disclosure of Faris

(US 5,457,554). This rejection is respectfully traversed.

US '554 discloses a method of generating a 3-D image using two cholesteric liquid crystals (CLC) inks, one which is left handed and another which is right handed, which are superimposed onto each other as shown in Figures 1 and 2. The left handed ink reflects the left circularly polarized portion and is viewed with a left circular polarizer placed on the left eye. The right handed ink reflects the right circularly polarized portion and is viewed with a right hand circular polarizer over the right eye. These images are spaced apart laterally to provide stereo displacement so that the images are seen as three dimensional by a viewer. See column 3, lines 1-10. See also page 32 of applicants' specification.

The CLC material can be in the form of flakes, laminae or platelets. US '554 discloses that inks that can be used are described in Serial No. 07/798,881 (now US 5,364,557).

US '554 does not disclose or suggest first and second image layers which each comprise polymerized or crosslinked cholesteric liquid crystal material obtained by polymerizing the material in its liquid crystal state at a temperature below 60°C. Thus, US '554 fails to anticipate applicants' claimed invention. Withdrawal of the rejection under 35 USC §102(b) is respectfully requested.

Rejection under 35 USC §102(b) in view of Sharp et al. (US '253)

Claims 1-17 are rejected as allegedly being anticipated in view of the disclosure of Sharp et al. (US 5,381,253). This rejection is respectfully traversed.

US '253 is directed to optical modulators which contain chiral smectic liquid crystal material. The optical modulators of US '253 cab be used in variety of devices, for example, for phase modulation in 2-D and 3-D holographic displays. See column 5, lines 41-65. However, US '253 does not disclose three-dimensional effects using chiral liquid materials.

Thus, US '253 does not disclose a method of generating a 3-dimensional effect utilizing at least one first image layer of a chiral liquid crystal material, and at least one second image layer of a chiral liquid crystal material, wherein one of the first and second image layers reflects right-handed circularly polarized light and the other reflects left-handed circularly polarized light.

US '253 also fails to disclose image layers that comprise polymerized or crosslinked

cholesteric liquid crystal material obtained by polymerizing the material in its liquid crystal state at a temperature below 60°C. The invention of US '253 relates to the use of chiral smectic liquid crystals, not cholesteric liquid crystals.

US '253 fails to anticipate applicants' claimed invention. Withdrawal of the rejection under 35 USC §102(b) is respectfully requested.

Rejection under 35 USC §102(b) in view of Sharp et al. (US '912)

Claims 1-17 are rejected as allegedly being anticipated in view of the disclosure of Sharp et al. (US 5,552,912). This rejection is respectfully traversed.

US '912 is a CIP of US '253. Like US '253, US '912 is directed to optical modulators which contain chiral smectic liquid crystal material. The optical modulators of US '912 cab be used in variety of devices, for example, for phase modulation in 2-D and 3-D holographic displays. However, US '912 does not disclose three-dimensional effects using chiral liquid materials.

Thus, US '912 does not disclose a method of generating a 3-dimensional effect utilizing at least one first image layer of a chiral liquid crystal material, and at least one second image layer of a chiral liquid crystal material, wherein one of the first and second image layers reflects right-handed circularly polarized light and the other reflects left-handed circularly polarized light.

US '912 also fails to disclose image layers that comprise polymerized or crosslinked cholesteric liquid crystal material obtained by polymerizing the material in its liquid crystal state at a temperature below 60°C.

US '912 fails to anticipate applicants' claimed invention. Withdrawal of the rejection under 35 USC §102(b) is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

Brion P. Heaney, Reg. No. 32,542
Attorney for Applicant(s)

MILLEN, WHITE, ZELANO
& BRANIGAN, P.C.
Arlington Courthouse Plaza 1, Suite 1400
2200 Clarendon Boulevard
Arlington, Virginia 22201
Telephone: (703) 243-6333
Facsimile: (703) 243-6410

Attorney Docket No.: MERCK-2708

Date: January 28, 2005